



Jobs Act for Public K-12 & Higher Education Institutions

Washington State University – IT Building

About the Jobs Act:

The Jobs Act for Public K-12 and Higher Education Institutions was funded through the 2010 Supplemental Capital Budget – ESHB 2836 Section 1016. \$50 million was given to Commerce. Commerce awarded 77 grants totaling \$42.5 million. Washington State University is located in the 9th Legislative District. For more information:

www.commerce.wa.gov

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IT takes their entire system down for six hours

Washington State University (WSU) provides world-class education to more than 26,000 undergraduate, graduate, and professional students and conducts transformational research. Founded in 1890 in Pullman, it is Washington's original land-grant university, with a mission of improving quality of life. WSU has campuses in Pullman, Spokane, the Tri-Cities, and Vancouver and extension offices in every county.

Situation:

Thirty years ago, WSU's IT building was state-of-the-art. The building's four chillers provided full redundancy and easily kept the campus' servers cool. But over the years more servers were added to meet the university's growing

computer demand and the chillers grew older. Now, the four chillers are well past their lifetimes and problems regularly occur.

Solution:

Faced with the possibility of overheating servers, WSU's Facilities and IT departments worked closely together to solve the problem. The solution involved removing the old chillers, which work similar to large air conditioning units, and connecting the IT building to the campus' chilled water loop. WSU's chilled water loop distributes cooled water generated

Project Highlights:

- *Connected the IT building to the campus' chilled water loop*
- *Estimated annual energy savings \$63,971*





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“We do conservation now because it saves you more in the future. It has a good rate of return.”

Terry Ryan

WSU’s Director Energy Systems Operations

by state-of-the-art high efficiency chillers for air conditioning. Over 70 buildings across the Pullman campus are connected to this loop.

It sounded simple, but it wasn’t.

The first hurdle was finding a time to do the work. Summer, the quiet time on campus, was out of the question, because the temperatures are too hot in Pullman. Another obstacle was installing over 1,200 feet of new piping to connect the IT building to the campus’ chilled water loop. But the largest hurdle – taking the servers off-line and transferring the IT building’s cooling to the chilled water loop had to be done in one continuous operation within a 36 hour window.

“It was quite a job,” said Terry Ryan, WSU’s director Energy Systems Operations. The project started Friday night and continued to Sunday mid-day. “It was the first time IT had ever taken their entire system down. For approximately six hours all of the central servers at the primary campus data center were down.”

Results:

Over 25,000 students, faculty, and staff no longer have to worry about losing access to their data, email, telephone service, and other central computing services. Connecting the IT building to the campus’ chilled water loop gives WSU significant energy and maintenance savings. The new cooling system is expected to save \$63,971 annually. And having two redundant chilled water services and a domestic water back-up cooling system restores the IT department’s confidence that the servers will remain cool even in an emergency.

The Job Act grant funding was extremely timely, said Ryan. “It helped us improve our campus’ teaching, learning, and research facilities.” The Jobs Act funded projects that will produce significant energy savings and reduce WSU’s utility bills.

WSU plans on paying off their state loan with the annual savings. “The operational savings will pay off our loan. It’s budget-neutral to the

university until the loan is paid,” said Ryan.

“We do conservation now because it saves you more in the future,” said Ryan. “It has a good rate of return.”

Measures:

- ***Connected the IT building to the campus’ chilled water loop***
- ***Installed over 1,200 feet of new piping***
- ***Reconfigured the existing four reciprocal chillers to a back-up cooling system***
- ***Installed a domestic water connection to the IT building for a back-up cooling system***

Total project costs: \$1,436,096

Estimated annual energy savings: \$63,971

Grant award amount: \$378,241